

REMARKS

The Office Action mailed August 13, 2008, has been carefully considered together with each of the references cited therein. The amendments and remarks presented herein are believed to be fully responsive to the Office Action. The amendments made herein are fully supported by the application as originally filed. No new matter has been added. Accordingly, reconsideration of the present Application in view of the above amendments and following remarks is respectfully requested.

CLAIM STATUS

Claims 1-4, 6-8, 10 and 11 and 14-17 are pending in this Application. By this Amendment, claims 1-4, 6, 10 and 11 have been cancelled as being drawn to a non-elected invention, without prejudice filling a divisional thereupon.

Claim Rejections Under 35 USC § 103

Claim 7, 8 and 14-17 stand rejected under 35 USC § 103(a) as being unpatentable over Hitoshi et al., Japanese Patent Application, JP2000226545 (Listed in the International Search Report) in view of Vincent et al. US 6,556,470. This rejection is respectfully traversed.

In substantiating its § 103 rejection, the Office states as follows on page 5 of the Office Action:

Hitoshi et al. teaches the use of ink fluid or recording fluid with antimicrobial agents containing heavy metals, colorant for fibrous materials. However it does not teach about electronic ink or paper. It also does not specifically teach the mixture of three antimicrobial agents of the instant claims 7 and 8 however it teaches the use of several antimicrobial agents including the three agents in the claims. As the agents are functionally equivalent, it would be obvious to one in the ordinary skill to choose any combination for the composition including the tree in the instant claims.

It is thus, Applicant's position that the Office has predicated its § 103 rejection upon the premise that all antimicrobial agents are functionally equivalent. Applicants respectfully can not agree with this premise, and take the position that the mixture of the three antimicrobial agents delineated in independent claims 7 and 8 are not functionally equivalent to those discussed in Hitoshi. Specifically, the instant specification provides, in great detail, that the particular combination of the three recited antimicrobials have advantages not present, nor recognized, by the references made of record. The problem which this invention overcomes is stated in the Application beginning on page 1 and continuing onto page 2 and is reproduced hereinbelow:

It has emerged, however, that colorants comprising complex-bound heavy metal ions or colorants which are notionally heavy metal free but contaminated by heavy metal ions may give rise to precipitations due to reaction of the heavy metal ion with customary biocides or customary biocide mixtures whereby nozzles in ink jet print heads in particular may become clogged. Such heavy metal ions, in particular multiply charged metal cations such as, for example, Cu²⁺, Fe³⁺ or Al³⁺, may be present as a residual impurity in the dye solution, in the pigment powder or in the pigment presscake and transported into the ink via the dispersing operation. Moreover, there may be heavy metal impurities in dispersants or other ink additives used. Since the abovementioned biocide-heavy metal complexes often also have distinct intrinsic colorations, this can have adverse repercussions for the color properties of the inks and hence of the ink jet prints produced. As well as printer nozzle clogging, insoluble complexes may kogate on the heating elements of the printer or lead to problems in relation to filtering operations.

Furthermore, the specification makes clear that this particular mixture of antimicrobials overcomes the problems extent in prior art as reflected in the

language found on page 2 of the instant specification, which is reproduced below for the convenience of the Office:

We have found that these objects are achieved, surprisingly, by a mixture of 5-chloro-2-methyl-4-isothiazolin-3-one (CMIT), 2-methyl-4-isothiazolin-3-one (MIT) and 2-bromo-2-nitropropane-1,3-diol (bronopol).

Thus it is made clear in Applicants' specification that this particular mixture of antimicrobials is superior to any mixture heretofore found in the prior art. It is shown in the present Application that other common biocides, such as 1 and 2-benzo isothiazoline-3-one (mentioned in Hitoshi, claim 2), cannot avoid formation of precipitates. Such evidence is proffered by the Specification on page 15, Table 1 with the results following therefrom. Such table and results are reproduced herein below for the convenience of the Office:

Table 1 (10% by weight solution of Direct Blue 199)

Active ingredient	Trade name	Pure dye solution	Cu ²⁺	Zn ²⁺	Fe ³⁺
0.01% of BIT	Mergal K10N (Troy)	+	++	++	++
0.01% of BIT	Nipacide BIT20 (Clariant)	+	++	++	++
0.01% of BIT	Proxel GXL (Avecia)	+	++	++	++
0.018% of bronopol 0.0011% of CMIT 0.00037% of MIT	Nipacide IB (Clariant)	---	---	---	---

--- no precipitate

- + formation of a precipitate
- ++ severe formation of a precipitate
- BIT 1,2-benzisothiazolin-3-one

It emerges that the biocide mixture of the present invention, unlike conventional biocides, does not form insoluble complexes with any of the heavy metal cations investigated. The comparative biocides lead to a severe formation of precipitates in the presence of Cu²⁺, Zn²⁺ or Fe³⁺.

In view of the foregoing evidence, its Applicants' respectful position that the combination of the claimed antimicrobials agents are not functionally equivalent to those discussed in Hitoshi. Therefore, one with ordinary skill in the art having a knowledge of Hitoshi, in view of Vincent, would derive no motivation to mix the three particular antimicrobials recited in the claims to arrive at the instant invention. Respectfully stated, it is Applicants' believe that the Office has merely picked through a generic listing of antimicrobials agents to find the instant invention obvious. However, one with ordinary skill in the art of antimicrobials is of the understanding that such antimicrobials are not functionally equivalent. Consequently, one with ordinary skill in the art would have no motivation to choose the particular combination of antimicrobials agents as claimed in independent claims 7 and 8 and arrive at the instant invention.

It is courteously contended that the Office has identified the antimicrobials present in the claims, and, has merely plucked such compounds from a generic listing of antimicrobials to find the instant invention obvious. It is Applicants position that merely finding the individual compounds listed in the prior art and excising them therefrom and then concluding that it would be obvious to one with ordinary skill in the art to combine the same constitutes the use of impermissible hindsight gained from a knowledge of Applicants' invention.

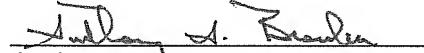
For at least the foregoing reasons, it is respectfully contended that claims 7 and 8, and all claims depending therefrom, can not be made obvious by Hitoshi et

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al., in view of Vincent et al. In consequence, Applicants courteously solicit reconsideration and withdrawal of the rejection.

In view of the forgoing amendments and remarks, the present Application is believed to be in condition for allowance, and reconsideration of it is requested. If the Office disagrees, the Examiner is requested to contact the attorney for Applicants at the telephone number provided below.

Respectfully submitted,



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